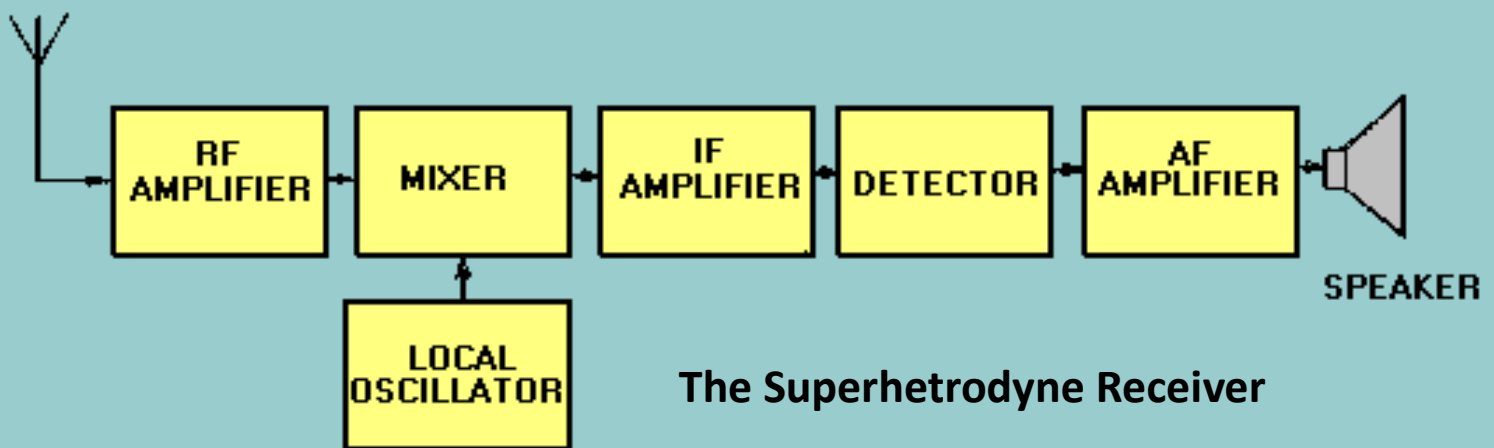
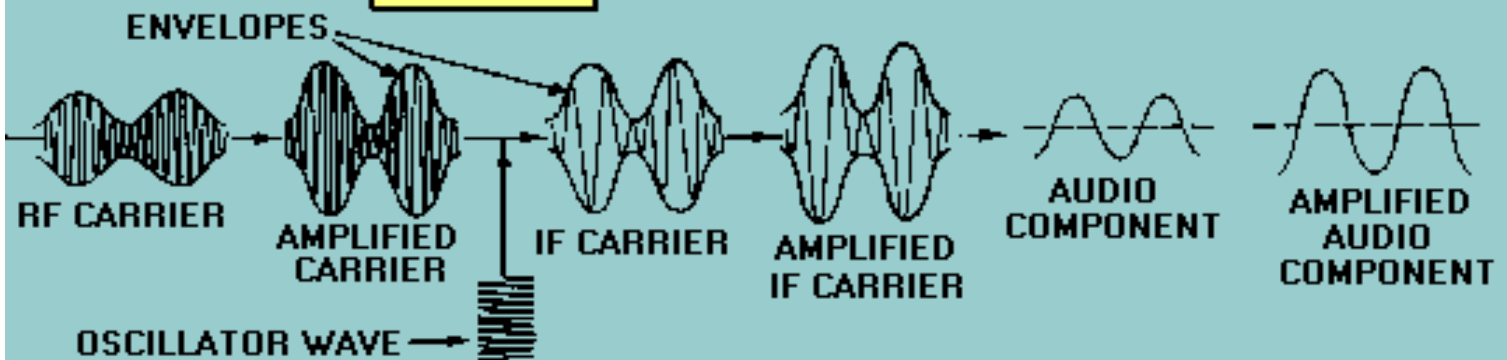


San Diego DX Club Bulletin

January 2016



The Superhetrodyne Receiver



JANUARY PROGRAM

Exploring the Mysteries of Long and Bent Path DXing
Panel discussion by W6YA, K6NA and W6YI

MEETING NOTICE:

WEDNESDAY, JANUARY 27, 2016

JOIN US AT THE SIZZLER, 3755 Murphy Canyon Road,
San Diego, CA 92123 (858) 278-6988

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A Word from the Prez . . .

John Vissat, NA6L



Happy New Year to all and good DX!

Well, it seems to be raining ATNOs on many of us again and if not an ATNO then it is quality band spots or completing the big three CW, SSB and DATA for a particular entity. Place a "quality" station in a distant location and suddenly the bands come alive no matter how low the SFI is hovering.

As I type this I'm watching the cluster and reading the comments from the EU operators who are complaining about lack of signal from K5P, EU being much of the way around the world from Palmyra after all. While on the subject of clusters, why in the heck would anyone post "nothing heard" or "nill/zero" in NY? They don't realize that 1. They are setting off cluster alarms for those that have programmed them for specific call signs and 2. No one cares where the DX is NOT being heard.

Currently K5P (Palmyra) <http://www.palmyra2016.org/index.html> is on the air with a great signal to SoCal and by the time you read this VP8STI (South Sandwich) should be taking calls and shortly after will be VP8SGI (South Georgia) giving some of us a few new ATNOs. <http://www.intrepid-dx.com/vp8/>

Speaking of DX, a few weeks back I had the privilege of hearing the 15m SSB exchange between Dom in North Korea P5/3Z9DX and our own W6YA, Jim McCook. As expected Jim was very loud and the P5 was at ESP level. I understand that Dom was using a whip temporarily installed on a fence post and he will bring better equipment when he returns to P5.

LoTW love, The popularity of the ARRL electronic QSO confirmation program continues to grow by adding users at a rapid pace. When I look at my LoTW account I have noticed new users confirming QSOs, from seven years ago and before. What is the earliest LoTW confirmation any of you have received?

Yes, that is nearly 3/4 of a BILLION processed QSOs.

Logbook of the World Status

729,193,766 QSO records have been entered into the system.

122,057,841 QSL records have resulted.

82,883 Users are registered in the system

122,983 Certificates are active

9,089,074 User files have been processed

A Word from the Prez (cont'd) . .

Somehow 82,883 users have figured out how to use LoTW and so can you!

I'm looking forward to seeing all of you on January 27th at the next meeting. We will be having an excellent presentation by some or "in-house" experts.

Exploring the Mysteries of Long and Bent Path DXing Panel Discussion by W6YA, K6NA and W6YI

Good luck to everyone working the current crop of DXpeditions,

John, NA6L

Vice President Report

Howard, W6HDG

It's a New Year and believe it or not, we are celebrating the 70th anniversary of the San Diego DX Club. Our club shirts say "Est 1945", but it probably wasn't until 1946 that things got going. That was the same year that the Northern California DX Club got its start as well. According to the history of our club (by the way, if you haven't read it, everyone should read www.sddxc.org/history.htm), the club was started by Dick Shanks W6BZE of "Shanks and Wright" Surplus Electronics fame. About 10 hams started holding meetings in Dick's shack – on the 4th Wednesday of the month! Can you imagine the excitement of getting permission to operate back on the ham bands after the war ended? The thrill of DX must have been alive and well. Many of the members must have also been heavily involved in refurbishing surplus gear to get on the air. I'd bet it would have been a blast to sit in on one of those meetings. In fact, once they perfect time travel, I'd like to send Howard KY6LA back with a Flex radio just for fun to debate BC-348 vs. Flex 6700 receiver design. They'd probably be asking, "what country is a "KY6" from?"

So what are some New Year's resolutions I'd like to see for our club? Here is my list:

1. New Member recruitment by inviting DX-minded friends to join.
2. Improve the way club members renew their membership. Consider use of Paypal for club dues and ability to pay multi-year payments through Paypal for convenience. You won't even need to have a Paypal account to use Paypal to pay dues with a credit card. **Completed before publication!**
3. Spiff up the Club Roster page on our website so that new members get added "real-time" to the page as they get added to the member database. Include a dues column in which "Paid through 20XX" is shown. Rather than updating four different club files every time a new member gets added, the single member database from our Secty/Treasurer should feed the club webpage, email system and dues accounting. **Completed before publication!**
4. Do a great job at Visalia Registration. Our club thrives on the funds provided by our participation at Visalia. We are responsible for the Visalia 2016 registration desk. I like to see lots of sign ups for this activity and a job very well done.
5. Consider a text message system to give members a heads up about rare DX heard by one of our members. Kind of like the telephone circle of old. The Yahoo Group has been used for DX Announcements but some members use the daily digest feature of Yahoo to avoid, shall I say, some of the bickering.

Help more members to register for Club Log and learn to use the excellent DX productivity tools that Club Log provides. Go to <https://secure.clublog.org/league.php?club=79> and click on the button that says "Generate DXCC League". If you are not on the list, you really should be. If you need any help, contact me. Our club is currently ranked 31st in the world!

So here's to a healthy, fun and DX filled New Year.

73 and Gud DX,

Howard, W6HDG

Secretary/Treasurer Reports

Ellen, N6UWW



The meeting was called to order by John NA6L at 6 PM. There were 42 in attendance.

Guests and visitors: There were several guests including Mats AF6CV, Monroe AG6JC, Bruce K6JU and Glen KJ6ZQH.

New Members: The club inducted two new members – Robert Sparks KA7IGN and Steve Tripp AI6CX.

Old Business: Deadline for Holiday Party RSVP is December 1. We already have 40 sign-ups.

New Business: Russ K5OA introduced himself as a club member from Murrieta who only makes our meetings occasionally. Russ mentioned that he would like to have the club consider donating money to worthy individual DXpeditions rather than just to NCDXF. John NA6L discussed the pros and cons of this idea as well as the issues which arose when we tried this idea previously.

An announcement was made about W6W, a Special Event station to be held at the Cabrillo National Monument Foundation sponsored event, "Fort Rosecrans Goes to War". Amateur radio operators will be setting up radios and antennas on 12/5 and 12/6 from 0900-1600hrs. There will be commemorative QSL cards. Vintage WWII radios will also be on display with stations operating on HF, VHF and UHF bands. For more information or to volunteer for an operating time, contact K6GO@arrl.net or NA6MB@arrl.net (619) 494-1204.

The Chesterfield Island DXpedition speakers were then introduced. - Arnie Shatz, N6HC and David Greenhut, N6HD. They started their presentation early at 6:10 PM.

Treasurer's Report

Statement Balance 12/31/2015 \$4398.72

Many thanks to Howard W6HDG for his countless hours spent on Club affairs. We now have PayPal as an option for dues payment. Please be sure to follow the simple instructions (include your call sign in the memo) and renew for up to three years. For those who want to remit payment in a more traditional manner, feel free to send your check payable to:

San Diego DX Club, Inc.
c/o Ellen Utschig
2104 Poplar Road
Oceanside, CA 92058-2332

Member data as of 1/15/16 - 10 paid through 2018, 5 paid through 2017, 37 paid through 2016

Ellen, N6UWW

THE SDDXC TOP 10

By John, K6AM

Be back next month.

John, K6AM

From the Editor

Bob, K9RHY



Sitting in front of my radio with my earphones on tuning around for weak stations (the heart and soul of DXing), I sometimes think about the technology pioneer/inventor who made DXing possible. Without the right receiver, DXing would be impossible. We can thank radio's premier inventor, Edwin H. Armstrong, who made receiver technology what it is today. (And for the SDR crowd, high-performance SDR receivers are typically constructed from some variant of the Armstrong technology). Armstrong, a true radio "thought leader" was responsible for the Regenerative Circuit (1912), the Superheterodyne Circuit (1918), the Superregenerative Circuit (1922) and the FM System (1933).

In 1898, Guglielmo Marconi transmitted CW using a "wireless telegraph", the first form of radio transmission, but Marconi didn't think voice would ever be transmitted.

In 1906, Canadian inventor Reginald Fessenden sent the faint sound of his voice and violin by radio. The next year, Lee de Forest invented the Audion, which made long-range reception and greater clarity possible.

Then, in 1913, sounds began booming from loudspeakers due to Armstrong's regenerative circuit, a predecessor to the superhet.

Armstrong (1890-1954) was born in New York City to a devout Presbyterian mother and a father who was vice president of Oxford University Press' U.S. branch.

When Edwin was 8, he contracted a nervous disorder that left him with lifelong tics when under stress. Withdrawn from school for two years, he began tinkering with mechanical and electrical devices and developed a keen interest in the embryonic ham radio.

"Armstrong was inspired to work in wireless transmission by Nikola Tesla at a time when Marconi was leading the world in the wrong direction with hundreds of wireless stations using obsolete equipment," writes Marc Seifer, the author of "Wizard: The Life and Times of Nikola Tesla." Seifer goes on to say that "Marconi based his design on Heinrich Hertz's spark gap technology. Tesla's oscillators, the importance of ground connections, his use of tuned circuits and the ability to create unlimited channels paved the way for Armstrong to develop and perfect both AM and FM radio."

Armstrong, Cont'd.

Armstrong entered the electrical engineering program at Columbia University in 1909 and began experimenting with radio signals.

In 1912, the year before his graduation, he discovered how de Forest's Audion could amplify radio waves so they could be heard without headphones. Armstrong made it happen with what he called the regenerative receiver. He figured out how to use it to transmit sound as well.

Armstrong's attorney advised him to file one patent covering both amplification and transmission. Armstrong had spent a lot of time developing transmission and wanted to patent it later, finally including the improved reception in his December 1913 patent filing.

Armstrong was awarded his first patent the next October, but de Forest started a legal fight that lasted 21 years. Meanwhile, Armstrong met David Sarnoff, chief inspector for the U.S. Marconi company.

Marconi executives weren't interested in the regenerative receiver, but Armstrong and Sarnoff became friends.

After America entered World War I in 1917, Armstrong became a captain in the Army Signal Corps and went to Paris to install radios in aircraft and set up the Allies' wireless communication system.

One night in 1918, as he heard anti-aircraft guns firing blindly at German bombers, he realized that a motor ignition system's electromagnetic waves might be used to locate enemy aircraft.

He thought about marrying this idea with other discoveries to amplify inaudible high-frequency radio waves by sending them through his regenerative circuit to earphones or loudspeakers.

The result was the superheterodyne receiver. It eased the way for tuning to specific frequencies.

Before the military could use it to direct anti-aircraft guns, the war was over. By then, Armstrong had been promoted to major.

It is widely held that the superheterodyne is the basic circuit of 98% of all radio and television.

Westinghouse Electric licensed both patents for \$335,000 (\$4 million now). Its first AM — amplitude modulation — radio station began broadcasting in October 1920.

Within two years, the nation had 580 stations and a million listeners.

In 1922, Armstrong invented the superregenerative circuit, which could amplify a signal 100,000 times. Sarnoff, now general manager for Radio Corp. of America, paid \$200,000 (\$2.4 million now) in cash and 60,000 shares for the rights, making Armstrong RCA's largest shareholder.

Armstrong's invention was used less in commercial radio and more in police, military and ship-to-shore communication.

In 1923, Armstrong married Sarnoff's secretary, Marion MacInnis. They had no children.

De Forest won some court victories in 1924-34 because of judges who didn't understand the technical issues, awarding Armstrong's patent for the regenerative receiver to the Audion inventor.

In 1933, Armstrong came up with two inventions — the limiter and the discriminator — which together provided the high-fidelity sound we know as frequency modulation (FM). The next year, RCA gave him an office to continue his FM research, but he didn't know that RCA had heavily invested in AM radio and that Sarnoff had decided that it should bet its future on television.

Sarnoff kept delaying approvals for FM research. In 1935, Armstrong was ordered to move out to make way for TV equipment.

Armstrong, Cont'd.

Armstrong decided to develop the FM broadcast industry on his own, selling a chunk of his shares for today's equivalent of \$82 million. He contracted with General Electric GE to make radios and built the first FM station in Alpine, N.J.

Sarnoff struck back by claiming RCA engineers had discovered FM on their own and didn't owe Armstrong anything for its use in radio or TV. Armstrong would prevail, but too late for him to benefit.

Alpine W2XMN went on the air with classical music in 1939. Soon other stations joined the network.

Sarnoff now aimed to settle. In 1940, he offered today's equivalent of \$17 million cash and no royalties for a nonexclusive license to build FM radios. Armstrong rejected the offer, insisting on royalties.

World War II put FM on hold. Armstrong donated his patents to the U.S. military, which used FM for communication and the superregenerative circuit to distinguish friendly from enemy aircraft. He spent the war researching the application of FM to radar, laying the foundation for long-range radar.

But once again evildoers conspired to cheat him. The FCC became captive to Sarnoff, who was the mastermind of a series of decisions that crippled FM for 20 years. It needlessly removed FM from its hard-won frequencies to the 88-108 MHz band, rendering obsolete 50 stations and half a million radios, thus robbing Armstrong of millions of dollars in royalties.

In January 1954, RCA offered to settle for \$200,000 (worth \$1.8 million now) and \$1 million more if the others accused of patent infringement agreed to similar terms.

But by then, Armstrong was penniless. He died at the end of that month at age 63. Not long after he'd been laid to rest, "Marion took up his many legal battles against some of the most powerful corporations in America," wrote Glenn Beck in "Dreamers and Deceivers." "Using funds from a settlement with RCA, she stood up to the giants one by one. In his ruling against Emerson Radio & Phonograph, Judge Edmund Palmieri declared that 'Armstrong was truly a pioneer in the field in theory and in fact.'"

Marion was awarded today's equivalent of \$8.5 million.

By the 1960s, FM had become dominant in music broadcasting. Most households had FM radios, with a majority of cars equipped with them by the 1980s.

And the ham community has the superhetrodyne.

IOTA BASH 2016 ---> The 12th annual IOTA Bash will be held on 26-27 February in Boerne, Texas. For further information, please contact Mike Crownover, AB5EB (ab5ebdxer[[@](mailto:ab5ebdxer@gmail.com)]gmail.com) or visit the IREF website (www.islandradio.org). [TNX AB5EB]



The Antenna Restricted DX-er

Do you live where it's hard to put up a good antenna? Have you been frustrated trying to work DX without a beam and tower? Do you want to maintain a low profile from your neighbors? We may have a solution for you.

Our speaker is Rick Borken K0XB, who is from Minnesota but lives in San Diego for part of the year. He and his wife rent a small house on Coronado, in a dense neighborhood with a small back yard and no opportunity to put up a beam or anything permanent. However, he has successfully worked well over 200 countries and all forty zones from this restricted location.

Learn the secrets of working DX with restricted antennas!



First licensed in 1961, Rick has had an Extra Class license since 1976. A retired Physicist, he spent most of his career in the aerospace industry. He's on the DXCC Honor Roll and is a member of the San Diego DX Club as well as the Twin Cities DX Association and the Lake Vermilion DX Association.

Rick's presentation will be part of the February meeting.